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ABSTRACT

The certification of learning outcomes required for degrees is identified as a crucial issue in outcome-oriented educational programs. Attainment is contrasted with competence as a basis on which to award college degrees in terms of their respective characteristics, assessment practices, and accountability for standards. A case is made that attainment, the educable enabler of competence, is preferred to competence itself as the basis on which to certify learning outcomes of educational programs. (Author/LBH)

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Attainment Rather Than Competence: A Legitimate Basis for the Certification of Learning Outcomes

Gary W. Peterson

ABSTRACT

Little attention has been devoted to determining the nature of certifiable learning outcomes in outcome-oriented educational programs. To date, these programs have generally been concerned with the identification of learning outcomes, and to a lesser extent, with assessment, per se; but they have not yet grappled with the certification of learning outcomes required for degrees. Attainment is contrasted with competence as a basis upon which to award college degrees, in terms of their respective characteristics, assessment practices, and accountability for standards. A case is made that attainment, the educable enabler of competence, is preferred to competence itself as the basis upon which to certify learning outcomes of educational programs.

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Attainment Rather Than Competence: A Legitimate Basis for the Certification of Learning Outcomes

Gary W. Peterson

Outcome-oriented education may be perceived as a solution for addressing society's needs for open access, equal opportunity and flexibility in post secondary education while at the same time maintaining credibility of academic standards. One of the most important implications of outcome-oriented education (whether it is called competency-based education or performance-based education) is that individuals may one day earn college degrees solely on the basis of the demonstration of knowledge or skills without having taken a single college course. And if, with the steady growth of outcome-oriented educational programs, educational institutions continue toward the eventual awarding of degrees based exclusively on public performances with explicit standards, the precise delineation of certifiable behaviors and their cognitive, psychomotor and affective components should be of serious concern both to educators and the public. Consequently, the distinction is made between competence and attainment to more clearly describe the kinds of behavior that may be assessed and certified for the awarding of college degrees. The point of view taken is that attainment, rather than competence, is the more realistic and legitimate basis upon which to award degrees where the principal requirement is the demonstration of specified scholarly or professional knowledge and skills.

The term "attainment" was used by Harris[1] in contrast to "exposures"

as a basis upon which baccalaureate degrees should be awarded. Giardina[2] suggested the concept of "achievement" as a criterion for the awarding of the baccalaureate. Knott[3] described a competence-based curriculum as having explicit educational outcomes and well-defined learning experiences to achieve them. These authors, however, did not describe the characteristics of attainment, achievement, or competence as they related to assessment practices, validation of standards, or plausible procedures for certifying learning outcomes.

Toward this end, competence is contrasted with attainment to the kinds of behaviors that can be certified for the awarding of degrees. In this essay, competence is defined as the demonstration of a composite set of skills, knowledge, attitudes, and personality characteristics in real-life settings that are required to successfully perform designated societal roles. Attainment, on the other hand, refers to the specific demonstrations of skills or knowledge in an academic setting which reflect the desired learning outcomes of educational programs. The latter is, therefore, preferred to competence when characterizing certifiable learning outcomes since realistically it is doubtful whether educational institutions can either measure or even foster competence within the framework of existing educational programs.

Characteristics of Competence and Attainment

The attributes and requirements of competence and attainment are presented in Table 1 to provide a background for the subsequent discussion of their respective assessment practices and procedures for certification. For purposes of this paper, certification in post secondary education is the act of verifying, that an individual has fulfilled the requirements

for a degree or certificate by a legitimate authority.

(INSERT TABLE 1 HERE)

Summarizing from the table, competence is described as holistic, subject to idiosyncratic integration of its elements, generalizable and transferable among real-life contexts, possibly insensitive to educational intervention, and predicative of subsequent effective performance. Attainment, on the other hand, is characterized by minimum performance standards, not immediately claiming generalizability, sensitivity to educational intervention, and concurrent validity. These differences become extremely important in deriving their respective methodologies for assessment.

The Assessment of Competence and Attainment

In order to capture the holistic nature of competence, individuals should be observed in the process of effectively integrating its elements under a variety of conditions, in actual occupational or societal settings over a period of time. As stressed by Bronfenbrenner[4], skills, knowledge or attitudes acquired in an educational setting can be evaluated adequately only if they are subsequently observed in non-academic environments. For example, if a physician candidate wishes to be certified competent in performing certain surgical procedures, he/she should perform these procedures in the field under a variety of conditions (intern), and be observed by a number of competent practitioners. All failures and errors are recorded to provide an indication of potential for unjustified risk or errors in self-judgment. Furthermore, criteria for certification should include not only the demonstration of the specific surgical skills, but other intrinsic

Table 1. Attributes of Competence and Attainment

Dimension	COMPETENCE	ATTAINMENT
1. Holistic vs. elemental	Competence is holistic requiring the integration of a complex set of skills, knowledge, and attitudes, both explicit and implicit to effectively meet occupational and societal demands.	Attainment is elemental consisting of clearly defined sets of knowledge and skills, with explicit performance standards.
2. Uniform vs. idiosyncratic standards of performance	Performance standards for the elements of competence are idiosyncratic such that some highly developed attributes compensate for lesser developed ones rendering the establishing of minimum standards for them highly questionable.	Attainment, ipso facto, connotes minimum standards of performance for all knowledge and skill areas required for degrees. Recognition of outstanding achievement beyond the minimum is desirable.
3. Susceptibility to educational intervention	Aspects of competence may not be susceptible to educational intervention. Not all individuals are suited for all occupations or walks of life. Innate cognitive, psychomotor abilities, or personality proclivities, or the ways in which these attributes are integrated, may preclude an individual from even becoming competent regardless of the amount or nature of education.	Attainments required for degrees are subject to educational intervention and are analyzed in terms of specific learning sequences, from simple to complex behaviors. Presumably, attainments are capable of mastery by virtually all individuals (excluding those with obvious behavioral disorders) if given enough time.
4. Validity of measures	Competence transcends time and environmental contexts. A competent individual is able to demonstrate competence in a wide variety of real-life situations over an extended period of time. Hence, measures of competence are predictive of subsequent performance.	Attainment is not claimed to be generalizable (although hopefully it is). All that is required is that an individual demonstrate specified knowledge and skills at a given time, in a prescribed context. Thus, measures of attainment possess only concurrent validity.
5. Legitimate statements	Since competence is predictive, statements are couched in the future tense, e.g. an individual will be able to... perform certain surgical procedures, conduct tax audits, facilitate therapeutic encounters, parent children, etc.	Attainment, being concurrent, is cast in the past-perfect tense, e.g. an individual has demonstrated ...effective written and oral communication, a variety of problem-solving skills, the ability to create an artistic rendering, etc.

factors such as judgment in determining warranted procedures and the intern's ability to engender a patient's trust and confidence.

The certification of competence necessarily includes the direct assessment of behavior in the cognitive, psychomotor and affective domains while attainment assesses the cognitive and psychomotor domains only. The principal reason for the direct assessment of the affective dimensions of competence is that quite possibly the affective attributes of competence could account for the greatest variance in the degree of transferability or generalizability of skills across a variety of environments. In fact, the affective attributes of competence may well provide the cohesiveness in personality that determine the determine the predictable manner in which the cognitive and psychomotor components are integrated and applied in variety occupational and societal roles. Examples of affective constructs of competence are ego-strength, energy, order, self-confidence, maturity, diligence, judgment, assertiveness, competitiveness, sensitivity, human caring and empathy. However, the current level of sophistication of psychometric devices to assess these attributes (e.g., the Minnesota Multiphasic Personality Inventory, Rorschach's Test, the Thematic Apperception Test, Omnibus Personality Inventory, the analysis of bibliographical success and failure incidences, etc.) does not seem to warrant their use in the certification of competence. Perhaps, with further research and development, measures will be perfected which can be used for such a purpose.

The time over which skills are observed is also an important aspect in the assessment of competence. Time, by itself, does not insure competence but it does allow an opportunity for assessors to observe the replication of a skill across a variety of situations, thus establishing greater probability that the behavior will be sustained beyond the certification proced-

ures. Seemingly, the degree of confidence that an individual has mastered the essential skills and is able to integrate and apply them to appropriate situations would be limited without sufficient time in which to observe them.

Examples of techniques which are appropriate for the holistic assessment of competence include the use of supervisor or peer ratings, to assess human relations skills; oral, written, or objective tests, to demonstrate knowledge mastery; the systematic recording of success and failure incidences, to demonstrate capability for accurate self-assessment; written and oral descriptions of decision-making processes, to assess critical thinking and problem-solving capabilities; diaries which record critical incidences, to assess judgment; or portfolios of work products over a period of time, to assess the capacity for sustained professional performance. Thus assessment procedures in the certification of competence, necessarily include direct professional review within occupational or societal roles, measures of behavior in the cognitive, psychomotor, and affective domains, and observations over a sufficient time period to ensure reliability of performance.

Attainment, on the other hand, is certified on the basis of successful performances, either directly, before a faculty jury (whose composition includes a practicing professional), or indirectly, in the form of individually administered testing procedures sanctioned by a jury. Performances take place in academic settings and typically consist of oral examinations, demonstrations, simulations, written essays, objectively scored tests, portfolios, or media-based performances. Secondly, affective aspects inherent in the demonstration of attainment are regarded as an implicit aspect of certifiable behavior. That is, with attainment, an individual would never be

certified to have possessed an attitude or value. If a particular affective state is deemed necessary for the demonstration of a specific skill, it can be inferred to exist when the required behavior (skill or knowledge) is adequately performed. Thirdly, the assessment of attainment, as in competence, emphasizes comprehensiveness of performance indicators. Rarely does the certification of attainment involve fewer than three different performance measures in order to reliably assess the full range of cognitive and psychomotor hierarchies inherent in attainment.

Unlike competence, minimum performance standards are established for the certification of attainment and are derived from two principal sources: current standards maintained in conventional educational programs, and minimum entry level skills required for employment or for subsequent graduate education. A discrepancy analysis[5] is conducted comparing performance levels of graduates from existing educational programs to typical performance levels required for entry into related jobs or graduate programs. Practicing professionals or lay consultants provide faculty with estimations of proficiency levels required of job seeking graduates, while graduate faculty members fulfill the same function in estimating levels of performance expected of students entering graduate programs. If there are significant differences in the desired performances for graduates and performance requirements for entry to jobs or professional schools, the faculty of the baccalaureate educational programs are charged with the responsibility for reconciling these differences.

More than one performance level may be recognized in the demonstration of attainment. In addition to the minimum acceptable level of performance, one to several higher levels of achievement may be acknowledged depending on the degree to which faculty wish to differentiate among them. By

drawing distinctions among levels of acceptable performance, respect for truly outstanding scholarly achievement is maintained which offsets the potential risk of degredation of standards to a common level of mediocrity, a common allegation of outcome-oriented educational programs. Since the appraisal of comprehensive behaviors comprising attainment often involves a high degree of subjectivity, ratings of student performances are determined by consensual agreement among the members of a faculty jury. A jury of at least three faculty members is desirable for evaluating attainment in order to offset individual bias. However, the size of the jury can be reduced after a consistency among raters is established.[6]

Students are allowed multiple opportunities to demonstrate the minimum standard and failures are not recorded, since only the successful performance is certified. In keeping with the notion of "outstanding", only one opportunity is allowed for a student to demonstrate a performance above the minimum. Students who do not demonstrate the minimum are advised of their strengths and weaknesses and are welcomed to try again when they believe the deficiencies have been removed.

Assessment tasks and criteria used to certify attainments are stated explicitly and publicly. It is common knowledge that grading standards in post secondary education have undergone serious inflation in the past decade such that the credibility of the baccalaureate degree has come under public scrutiny. By awarding degrees based on attainment, a means is provided which both students and the public know exactly the kinds of knowledge,skills and standards are required of graduates. In this way, an important step is taken toward restoring declining standards and regaining public trust in the baccalaureate certificate.

Performances used to certify attainment are both process and content

oriented. In typical jury reviews, students are required to demonstrate mastery of the content of a discipline as well as proficiency in the application of cognitive processes. Examples of cognitive processes evaluated in the demonstration of attainment include effective communication, problem solving, critical thinking, hypotheses testing, and critical appreciation. Both of these aspects may be observed through comprehensive performances such as having students conduct a scientific experiment, produce a creative work of art, or propose a strategy for a constructive human intervention. Thus, the most important aspects in assessing attainment are: the recording of successful performances only, implicit assessment of affective components of attainment, comprehensiveness of assessment tasks and multiplicity of measures sampling both cognitive and psychomotor domains, explicitness of performance tasks and criteria, and the observation of the processes and products of good scholarship.

The Ultimate Responsibility for Performance Criteria: Who is the Guardian?

Criteria for competence in professional roles are established and maintained outside the eucational enterprise, often in the form of licensing boards. Guardianship of criteria for attainment rests with the faculty of an educational institution, but with active collaboration of external practitioners. Performance criteria for competence are derived systematically from job task analysis procedures and results in the identification of essential skills and knowledge. Professional licensing boards or accrediting agencies may evaluate educational programs and assessment procedures to determine whether graduates possess minimal qualification for entry into the labor force, but the actual locus for the assessment of skills required for

the certification of competence occurs on-the-job and after a predetermined amount of experience has been accumulated. Consequently, a terminal academic degree does not imply the possession of competence. Educational institutions provide only educational experiences which allow individuals to master the knowledge and essential skills (attainments), required for entry into a profession. The attainments acquired in academe are therefore the enabling skills which serve as the building blocks for eventual professional competence.

The real work of professional licensing and certification procedures is are from ideal. Credentials or licenses, which permit professional practice, are often issued on the basis of academic exposure (prescribed by licensing boards) and/or the achieving of minimum scores on normatively standardized examinations. Often, licensing examinations require only lower order cognitive skills (e.g. recall or recognition) which have little, if any, predictive validity with respect to subsequent job performance. A recent review of current practices in certification of professional competence by Menges[7] indicates that a significant gap exists between the rigorous requirements for assessment and certification of competence and the actual professional certification procedures in use today. Assessment criteria and standards for certification are often influenced by intuition and biases of state legislators interacting with power politics. Hence, the state of affairs in the certification of professional competence, based on validated job or occupational performance standards, may be viewed in its infancy (at best).

The certification of competence related to effective citizenship poses some extremely perplexing issues. Conceivably, competence would be derived from the identification of characteristics of individuals who contribute to the maintenance and progress of society. Are the characteristics of good citizenship determined by their absence as in the case of individuals who

are on welfare or incaracerated? Or is good citizenship represented by those who hold jobs, voluntarily contribute to community service, and attend to the needs of children, possess moral virtues, etc.? Attributes of this latter group are certainly not the exclusive province of baccalaureate educational programs. Furthermore, what would be the composition of the authoritative body that would certify the possession of these characteristics?

Attainment addresses the issue of identifying and defending the desirable characteristics of good citizenship by having the faculty formulate the desired outcomes of educational programs with the advice of representatives of selected groups from outside academe such as alumni, employers of students, lawmakers, the clergy, or the media. The important point of emphasis is that the faculty of an educational institution is ultimately responsible for determining the nature of attainments which prepare individuals for effective citizenship. Since educational institutions are charged with the responsibility of fostering the development of basic knowledge and skills for good citizenship and for the enrichment of life, attainment appears to be a much more plausible basis upon which to certify learning outcomes related to general or liberal education.

Conclusion

In closing, the following allegory demonstrates the relationship between attainment and competence:

> There was once a drama instructor who wished to teach students how to make an audience laugh. He, himself being highly competent, could induce an audience to laugh uncontrollably merely by holding up a green feather in one

> hand and a red feather in the other and smiling with a sheepish grin. However, often was the case when he would hand the feathers to students to precipitate laughter as he did, audiences would not only snub the poor students but hiss and boo them as well no matter how hard they tried. In fact, the harder some student tried the more intense became the boos and hisses. Finally, after much labor and coaching, students were eventually able to elicit laughter by holding up a green and a red feather and smiling with a sheepish, lecherous grin.
>
> -Anonymous-

At the risk of extending a metaphor too far, a basic skill is analogous to being able to hold the feathers correctly and smile salaciously, an attainment is making the audience laugh once, while competence is the ability to make varieties of audiences laugh under varied settings and conditions. The individual would be certified competent by having demonstrated the criteria established by experts representing a professional accrediting agency such as Actors Equity.

Educational institutions possess only limited capabilities for fostering human growth. They can provide opportunities for youth and adults to develop certain skills, acquire knowledge, and perhaps adopt some desirable attitudes. With these modest expectations, institutions cannot be held accountable for engendering all skills, knowledge and attitudes required for success, or for the way in which these are integrated and applied in professional endeavors or in life in general. Attainment, the educable enabler of competence, rather than competence itself, appears to be the more reasonable and legitimate basis upon which degrees from outcome-oriented educational programs are awarded.

FOOTNOTES

(1) Harris, J., "Baccalaureate Requirements: Attainments or Exposures," Educational Record, Winter 1972, pp. 59-65.

(2) Giardina, R.C., "The Baccalaureate: Defining the Undefinable," Journal of Higher Education, February 1974, pp. 112-122.

(3) Knott, B., "What is a Competence-Based Curriculum in the Liberal Arts?" Journal of Higher Education, January/ February 1975, pp. 25-40.

(4) Bronfenbrenner, E., "The Experimental Ecology of Education," Educational Researcher, October 1976, pp. 5-15.

(5) Kaufman, R.A., Educational System Planning (Englewood Cliffs NJ: Prentice-Hall Inc., 1972).

(6) Peterson, G.W., "Curriculum of Attainments: Final Report," JSAS Catalogue of Selected Documents in Psychology, August, 1977.

(7) Menges, Robert J., "Assessing Readiness for Professional Practice," Review of Educational Research, Spring 1975, pp. 173-208.

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